

**Nomination for Representation of ACCEO
Alliance for California Current Ecosystem Observation,
at IOOS Summit Meeting**

January 14, 2003

In recognition of the need for an observing system for the entire California Current Pelagic Ecosystem, scientists participated in community meetings held in Monterey, Seattle, and Portland in 2002, forming an **Alliance for California Current Ecosystem Observation (ACCEO)**. Represented at the meetings were the major state and federal agencies involved in ocean monitoring and management, as well as the major academic partners with capacity in California, Oregon, and Washington. Organizations participating included seven universities, two state resource agencies, three private foundations, various National Marine Fisheries Service (NMFS) Laboratories, National Ocean Service (NOS) Sanctuaries and NOS HAZMAT, the Navy Post Graduate School, two Canadian agencies, and a Mexican university. The observational capacities of the group included existing pelagic ecosystem surveys, California Cooperative Oceanic Fisheries Investigations (CalCOFI), Investigaciones Mexicanas de la Corriente de California (IMECOCal), Global Ocean Ecosystem Dynamics (GLOBEC), and various Canadian surveys, bird and mammal observation, shore-based HF radars, moorings, satellite image analysis, state and federal fishery surveys, hazard mapping, Partnership for Interdisciplinary Studies of Coastal Oceans (PISCO), and NOS near shore and estuarine ecological observation.

The focus of these meetings was how best to provide a practical backbone of coastal and oceanic physical and biological observation for the California Current marine ecosystem that would permit analysis of effects of climate variability on living marine resources, support the management of its natural resources, marine reserves and sanctuaries; preserve healthy marine ecosystems, and protect human health.

Participants defined the mission of **ACCEO** as follows:

To facilitate and coordinate monitoring of the pelagic ecosystem of the entire California Current, and to promote integration of California Current regional pelagic-monitoring programs to the larger benefit of all; understand the dynamics of the California Current and its populations and determine how the chemistry and biology of the California Current populations are affected by interdecadal to seasonal changes in physical forcing and water mass distributions. This effort will generate information needed for wise management of California Current natural resources, marine reserves, and protected species, and define the oceanic boundary conditions for coastal estuaries. Such boundary conditions are needed for assessment and management of human impacts on estuarine water quality and natural resources.

Participants at the workshops recognized that ecosystem measurements need to be made at the scale of the entire California Current System (CCS) so that populations and processes over

their entire range can be observed. It is also critical to include measurements at the mesoscale since a great deal of variability is contained within eddies, jets and filaments of the CCS. High-frequency observations in the coastal zone are also essential for ecosystem studies because they permit tracking of response of populations and processes to upwelling-and storm-event driven variability. For climate-scale studies, physical and biological measurements are greatly enhanced if they can be interpreted in the context of past measurements. ACCEO participants strived to develop a design that supported, as best as possible, all time/space scales through a combination of ship-board surveys, moorings, shore based HF radars, and satellites following established measurement protocols. The major building blocks for pelagic ecosystem observation are the quarterly CalCOFI series which extend from the Mexican Border to Point Conception, the Mexican IMECOCal surveys, the Newport line off the Oregon Coast (funded by GLOBEC), and the Station P hydrographic line and various near shore lines along Vancouver Island sampled by the Canadians. All of these existing monitoring lines are continuing time series, all provide standard hydrographic measurements and biological measurements such as chlorophyll, zooplankton biomass and species composition, and all include ichthyoplankton tows. While most of the lines are a continuation of existing ongoing time series, a significant geographic gap exists off Northern California. In the ACCEO program that gap will be filled through the participation of Humboldt State University and other marine laboratories.

Workshop participants made substantial progress over the course of the three meetings reaching agreement on guidelines for developing a monitoring plan. Highlights are as follows:

- " The highest priority for research vessel survey lines shall be to maintain existing lines, resume historical lines (especially those within sanctuaries or existing or potential marine protected areas), then add new lines in areas of particular importance or to fill critical gaps in coverage.
- " Fixed monitoring instruments (moorings, HF Radars) and gliders shall be placed in locations that support regional needs for event scale monitoring in the near shore zone and to provide boundary conditions for observations in bays and estuaries.
- " Shipboard marine bird and mammal observations shall be included in cooperation with NOAA, Point Reyes Biological Observatory and universities such as the U. Washington, U.C. Santa Cruz, U.C. San Diego, and U.C. Irvine.
- " All data and data products will be shared in a timely manner over the internet; all data will be managed following the same protocols.
- " Production of synthetic data products shall be a key responsibility of the ACCEO team. Timely distribution of these products to the public (Sanctuaries, visitor centers, public aquaria) shall be coordinated by an ACCEO management office.
- " Canadian and Mexican representatives shall be included in the consortium to insure the integration of measurements over the entire California Current.